



REMARKS

Applicant has received and reviewed the Office Action mailed April 25, 2002. By way of response, Applicant has amended claims 1, 5. Claims 1-14 and 17-19 are pending. No new matter is introduced. Applicant submits that the amended claims are supported by the specification.

Claim Rejections - 35 U.S.C. §102

Claims 1-4, and 8-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura et al. (Nakamura), U.S. Patent 6,235,188. Nakamura discloses a system adapted to evaluate the degree of pollution in water by evaluating the COD value of various water reservoirs, such as a pool, bath, cooling tower, fish raising vessel and the like (col. 2, lines 2-3). In contrast, the present invention claims a method and device adapted for removing solids and eliminating water contamination by organic and biological materials.

Furthermore, the present invention concerns a method for operating streams of wastewater in cooling towers. For the purposes of this invention, a cooling tower is a heat exchanger of direct contact between the flowing air and the water stream. A basin is part of this engineering unit, which collects the cooled water as drops or spray. In any case, the basin volume is very low compared to the total volume of circulated water. Some commercially available cooling towers do contain a water reservoir. In these situations, the reservoir is generally adapted to accept water inflow streams, and to regulate water outflow to the heat exchanger unit.

Nakamura's patent concerns evaluating the COD value in the reservoir tank of the cooling tower. In contrast, the present invention is concerned with treating the streams directed to the heat exchanger units. For example, the present invention reduces the COD by equilibrating the wastewater stream with sufficient airflow. The present application also teaches a method and device adapted to avoid solid precipitation in the pipeline. As a side benefit, the contamination of the stream by both chemical and biological entities is inhibited. Accordingly, the core of the present invention is the environmental benefit of reusing wastewater. For example, the

specification states, "It has now been surprisingly found, and this is an object of the invention, that it is possible to utilize waste water to operate cooling towers and related equipment...". In this respect, such a reuse of valueless effluent streams in cooling towers is not known in the art and originally taught in the present Application. Claim 1, has been amended to limit the claimed method to feeding a stream of waste water to the cooling tower. This is not suggested in the Nakamura patent.

Applicants acknowledge that, with respect to claims 3 and 4, the oxidant is added in an amount suitable to maintain the Redox potential at the inlet of the cooling tower in the range of 0 to 200 mV and from 300 to 400 mV. Said ranges are known to be indicative for water pollution, whereas from 0 to 320 mV the pollution is of level H (high) and in the range of 320 to 600 mV the pollution is of level L (low) (See Nakamura's Pat. column 8 line 18-24). The similarity between Nakamura and the present invention can be explained by the fact that those mV ranges are indicative for contaminated water to be analyzed, as in Nakamura, or treated, as in the present invention.

Claim 14 is directed to a method using a sand filter with backwash. This aspect of the invention is not discussed in Nakamura.

In the previous Office Action, Examiner has indicated that claims 5-7 would be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph, and amended to include all of the limitations of the base claim and any intervening claims. As discussed, the claims have been amended to comply with 35 U.S.C. §112, second paragraph. Claim 5 has also been amended to include all of the limitations of the base claim and any intervening claims. Claims 6 and 7 are dependent on amended claim 5. Accordingly, Applicant now believes claims 5-7 are in condition for allowance. Notification to this effect is earnestly solicited.

Examiner has indicated that claims 17-19 are allowed. Applicant thanks Examiner for the allowance of these claims.

CONCLUSION


In conclusion, each of claims 1-14 and 17-19 are in condition for allowance. The Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below, if the Examiner believes that doing so will expedite prosecution of this patent application.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Respectfully submitted,

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10/25/02
Date



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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In the Claims

Please amend claim 1 as follows:

1. (THRICE AMENDED) A method of operating a cooling tower, comprising feeding to said cooling tower a make-up stream of waste water containing organic and/or biological contaminants, causing a side stream taken from the recirculating stream to pass through an electrolytic cell that performs oxidation/reduction reactions using DC electrical current for decomposing water and generating chlorine, removing solids precipitated by the action of said cell, and remixing said treated side stream with the main stream, before feeding them to said cooling tower.

5. (THRICE AMENDED) A method [according to claim 1] of operating a cooling tower, comprising feeding to said cooling tower a make-up stream of water containing organic and/or biological contaminants, causing a side stream taken from a recirculating stream to pass through an electrolytic cell that performs oxidation/reduction reactions using DC electrical current for decomposing water and generating chlorine, removing solids precipitated by the action of said cell, and remixing said treated side stream with the main stream, before feeding them to said cooling tower, further comprising adding a non-oxidizing biocide to the re-circulating stream as an aid in the prevention of biofouling.